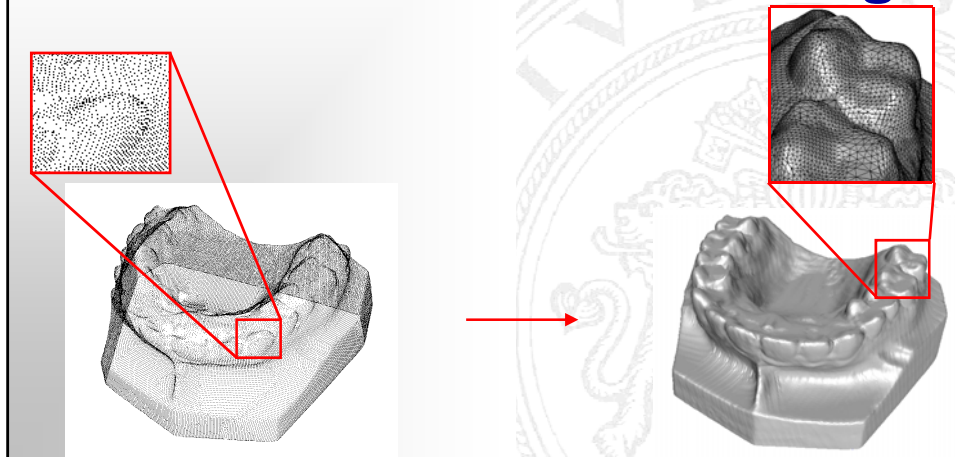
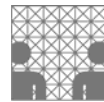


# Seminar

## 3D-Geometrieverarbeitung



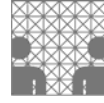
### Übersicht



1. Termin:	18.10.	Organisatorisches, Einführung in die Thematik
2. Termin:	25.10.	Vergabe der Vortragsthemen
3. Termin:	01.11.	Scanner vorführen
4. Termin:	08.11.	
5. Termin:	15.11.	
6. Termin:	22.11.	
7. Termin:	29.11.	
8. Termin:	06.12.	
9. Termin:	13.12.	
10. Termin:	20.12.	
11. Termin:	10.01.	
12. Termin:	17.01.	
13. Termin:	24.01.	
14. Termin:	31.01.	fällt aus



## Seminarthemen

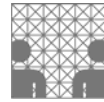


### Themenbereiche:

- **3D-Scan-Methoden:**
  - Structured Light
  - Laser-Scanner
  - MS Photosynth, Bundler
  - Laser Range Finder
  - TOF-Kameras
- **Oberflächenrekonstruktion**
  - Implizite Funktionen
  - Alpha-Shapes
  - Ball-Pivoting
  - Crust
  - Cocone
  - Refinement Reduction



## Seminarthemen

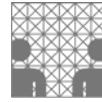


### Themenbereiche:

- **Oberflächenmanipulation**
  - Glättung
  - Löcher füllen
  - Kombination mehrerer Scans
- **Formvergleich**
  - Shape Retrieval

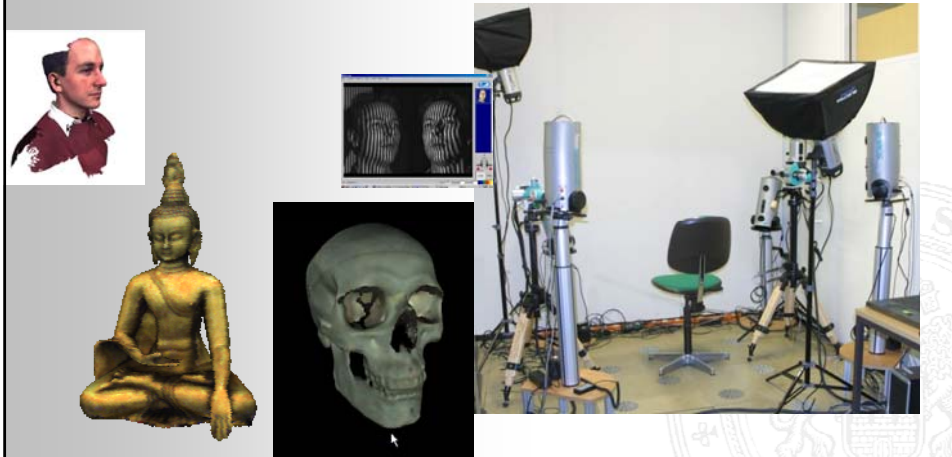


## Seminarthemen

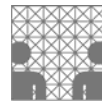


### Structured Light Scanner

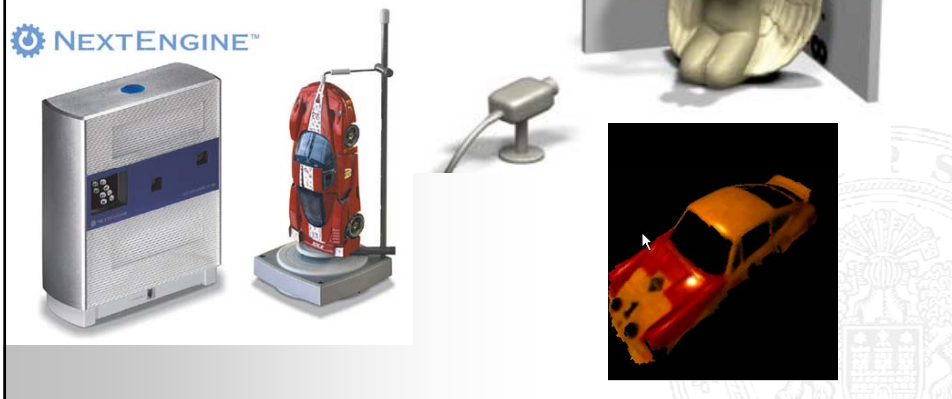
[www.breuckmann.com](http://www.breuckmann.com)



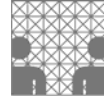
## Seminarthemen



**Laser-Scanner:**  
DAVID-Laserscanner  
NextEngine 3D Scanner



## Seminarthemen

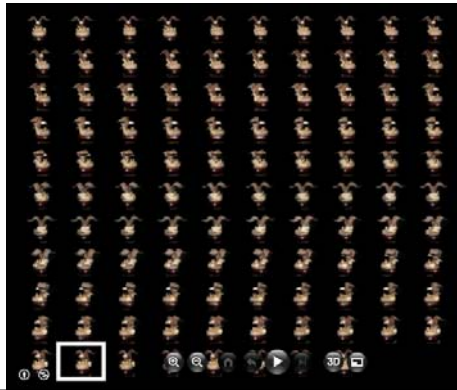


### MS Photosynth, Bundler, etc.

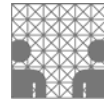
<http://photosynth.net/>

<http://phototour.cs.washington.edu/bundler/>

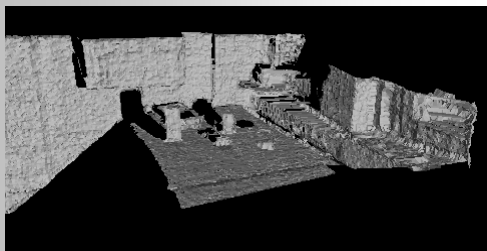
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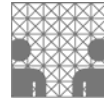
## Seminarthemen



### Laser Range Finder (z.B. SICK LRS 200)



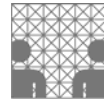
## Seminarthemen



### Time-Of-Flight (TOF) Kameras



### Oberflächenrekonstruktion: Implizite Funktionen



- Surfaces from Unorganized Points (Hoppe)



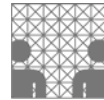
## Oberflächenrekonstruktion: Implizite Funktionen



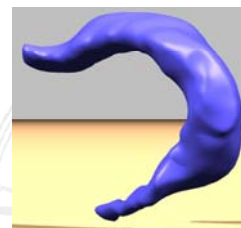
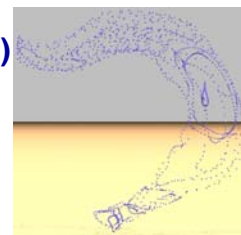
- Surfaces from Unorganized Points (Hoppe)
- Radial Basis Functions



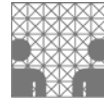
## Oberflächenrekonstruktion: Implizite Funktionen



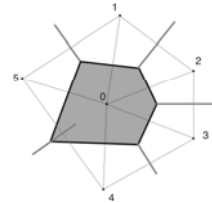
- Surfaces from Unorganized Points (Hoppe)
- Radial Basis Functions
- Level Sets



# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes

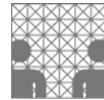


WS 2008/2009

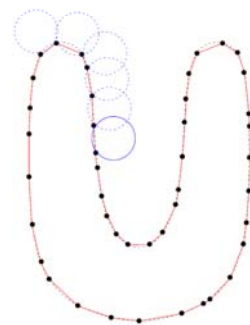
Surface Reconstruction: Dr. Peer Stalling

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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting

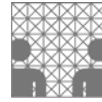


WS 2008/2009

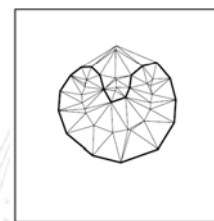
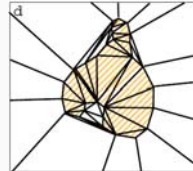
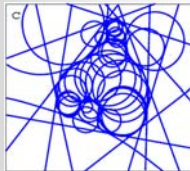
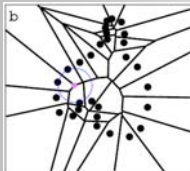
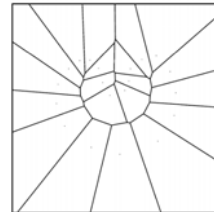
Surface Reconstruction: Dr. Peer Stalling

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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting
- Crust & Power Crust

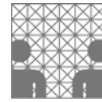


WS 2008/2009

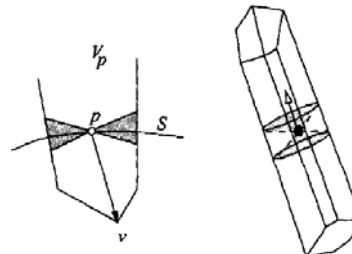
Surface Reconstruction: Dr. Peer Stalling

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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting
- Crust & Power Crust
- Cocone



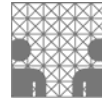
WS 2008/2009

Surface Reconstruction: Dr. Peer Stalling

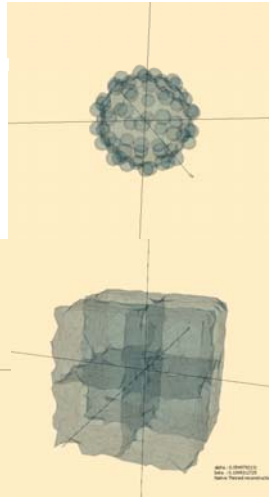
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# Oberflächenrekonstruktion: Computational Geometry



- Voronoi Diagrams, Delaunay Triangulations and Alpha Shapes
- Ball Pivoting
- Crust & Power Crust
- Cocone
- Refinement Reduction

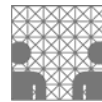


WS 2008/2009

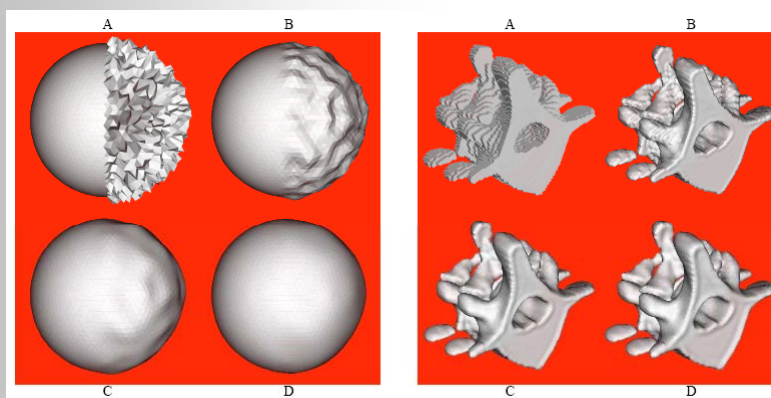
Surface Reconstruction: Dr. Peer Stalling

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p. 17

# Oberflächenmanipulation

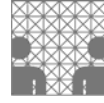


## Oberflächenglättung

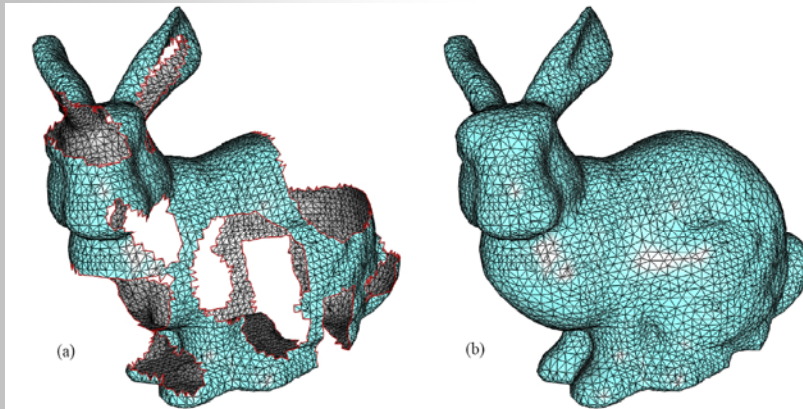


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## Oberflächenmanipulation

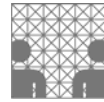


### Löcher füllen

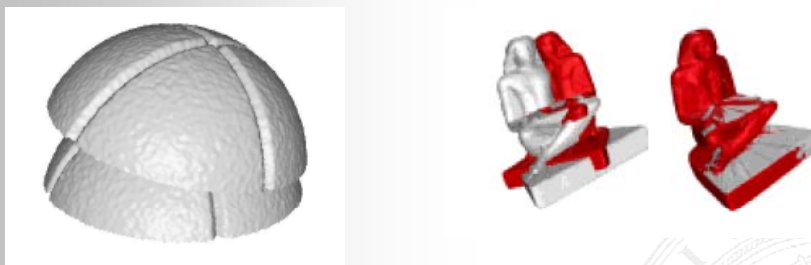


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## Oberflächenmanipulation



### Kombination mehrerer Scans (Alignment/Registration)



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# Formvergleich



## Shape Retrieval-Methoden

